How the current economic crises may influence the forthcoming fertility intentions in the Southern European Countries?

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Abstract

Over the past decades, many studies have attempted to describe and explain the persistence of low fertility rates among the countries of South Europe. Considering the sustained decline in fertility, in these countries, this paper aim to contribute to characterize the individuals who plan to have children in the forthcoming future *versus* those who intend to have them later. Additionally, it intends to analyse the extent to which different social and demographic circumstances are related with those intentions, among residents in the Southern European countries. Using data from Eurobarometer 2011, we use a logistic regression model to identify and quantify the effect of significant covariates in the planning of childbirth in the short term.

Our results show that fertility intentions differ between countries and according several socio-demographic factors, such as age, partnership and labour market participation. In the Southern European countries, are more likely to intend to have a child, in the next three years, those who participate in the labour market, aged over 29 years old, married and residents in Italy.

Keywords: fertility intentions, partnership, labour market participation.

1- Literature Review

Over the past decades, particularly from the 80s, fertility trends in the Southern

European Countries have been characterised by the postponement of childbearing and by low fertility rates (Frejka and Sobotka 2008; Oliveira 2007, 2012; Van de Kaa 1998, 2002; Spéder and Kapitány 2009) or even by the "lowest-low fertility" – according to the terminology adopted by Kohler et al. (2002).

The decline in period fertility levels has been influenced by higher social capital investments (Billari and Kohler 2002; Mcdonald, 2006) and facilitated by using modern contraception methods, allowing for people and couples to carry on real preferences about "when" and "how many" children they have (Ariès 1980; Cunha 2002, Hakim 2008, 2003; Leridon 1987; Sobotka 2008; Van de Kaa 2002).

Given that the persistence of low fertility has become a major social and political concern, caused by the important socio-economic issues that it implies, many studies have tried to elucidate this trend and understand its future evolution (Billari et al. 2009; Frejka and Sobotka 2008; Goldstein et al. 2003; Goldstein et al. 2009; Sobotka 2004, 2008, 2009; Spéder and Kapitány 2009).

Assuming that intentions emphasize the importance of individual motivations (Schoen et al. 1999), they may be considered the proximate antecedent of the behaviour itself (Ajzen 1991, 2006; Billari et al. 2009; Buber and Fliegenschnee 2011) once it reflects an intentional human behaviour (Schoen et al. 1999). So, the individual's fertility intentions can be accurate predictors of actual fertility behaviour (Berrington 2004; Merz and Liefbroer 2010; Miettinen et al. 2011; Philipov 2011; Schoen et al. 1999; Testa 2012; Vitali et al. 2009), particularly when it comes of a given point in time, as the near future. (Ajzen and Fishbein 2005; Philipov 2009; Billari et al. 2009; Miettinen et al 2011; Testa 2010).

Thus, the analyse of fertility intentions can offer a significant contribute to the knowledge of current reproductive behaviour as well as to the forecast of their future evolution, through the anticipation of the way individuals foresee their fertility decisions (Bien 2000). This decision, however, may be related with some particular behaviour patterns, socially differentiated, according to age, labour market participation, level of education, marital status and parity (Billari and Philipov 2004; Frejka and Sobotka 2008; Preston 1986; Schoen et al. 1999; Sobotka 2009, 2008; Toulemon and Testa 2005; Vitali et al. 2009).

The intention of having a(nother) child is usually planned (Buber et al. 2012; Cunha 2007; Sobotka 2008) and according to Ajzen's TPB (Theory of Planned Behaviour ?) intentions to perform behaviors are conditioned by the acquisition of resources, opportunities and perceived behavioral control (Ajzen 1991, 2006). The fertility intentions must, for this reason, to fit within the life course (Morgan and Rackim 2010). Marriage and childbearing are, frequently, postponed until the achievement of other goals in life, such as completing education (Mcdonald 2008; Van de Kaa 1998) and establishing oneself in the labour market (Billari and Kohler 2009; Buber et al. 2012).

In a context where there has been a progressive increase in the levels of education, it becomes particularly relevant to estimate how education affects fertility intentions (Testa 2012). Although lengthening of school courses is often seen as a competitor activity with fertility intentions (Barber 2001; Buber et al. 2012), higher levels of education are usually associated with elevated fertility intentions (Berrington 2004; Spéder and Kapitány 2009; Testa 2012; Toulemon and Testa 2005). In principle, a higher level of education is associated with higher chances of getting the best allocations in the labour market and higher incomes.
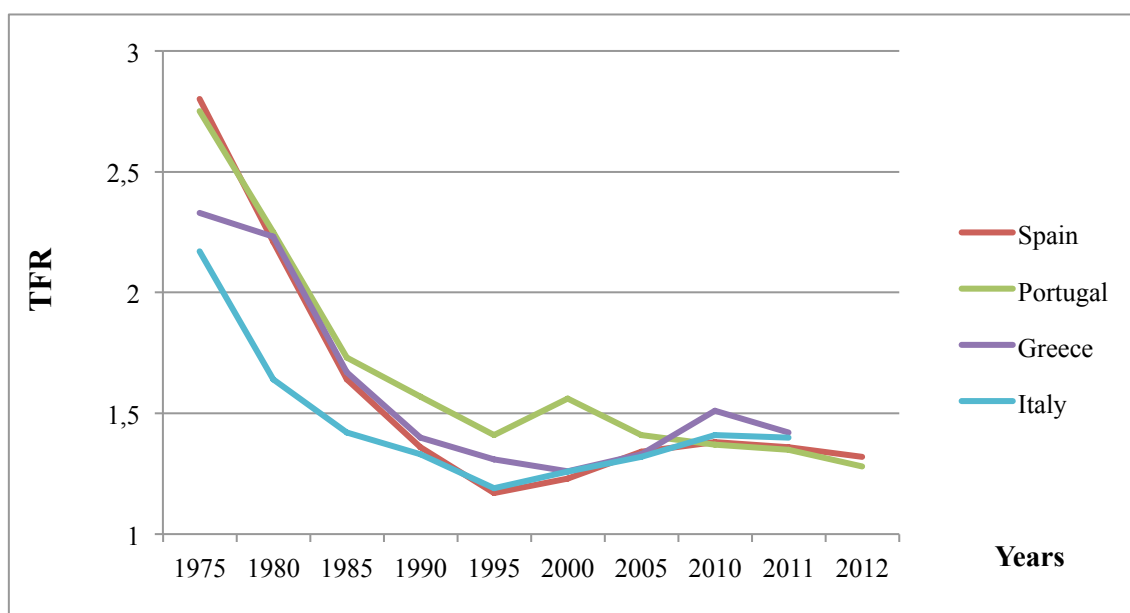
Similarly, several studies have highlighted the importance of the conjugal ties in achieving reproductive plans. Living with a partner may, possibly, reduce perceived stress levels, especially in raising children (more support available) and enhance the disposable incomes as long as couples can associate their resources for ordinary expenses (Barber, 2001; Aassve et al. 2012). According Bongaarts (1998). Contrarily involuntary childlessness can be originated by the marital disruption or the inability to find a suitable partner.

In a context where the ability to balance work and family has been suggested as an explanation for higher fertility choices, the gender and their socially differentiated roles (unequal division of responsibilities and rights) has been another aspect often described as influencing the fertility decisions (Billari and Kohler 2009; Buber et al. 2012; Mason 1995; Mills 2010; Myrskyla et al. 2008; Mcdonald 2008; Oláh 2001, Puur et al 2008).

The age has been another variable significantly related to fertility results (Buber et al. 2012; Spéder and Kapitány, 2009). Due to the rising mean age at first birth, the period fertility rate has been below the cohort fertility rate, without necessarily implying a reduction in the levels of completed fertility (Bongaaarts and Feeney 1998; Frejka and Sobotka 2008; Goldstein et al. 2009; Sobotka 2004). However, being the recovery of second order births weaker than first-order ones (Frejka and Sobotka 2008), the concern is that not all postponed births can be recovered in the remaining fertile years (Van de Kaa 1998), once the choices are often a rational response to uncertainty (Balbo et al. 2012) and changes in life circumstances of the couples can modify their reproductive plans (Mcdonald 2008; Philipov 2009).

2 – Brief overview of fertility in Southern European Countries and Research Hypothesis

Figure 1 – Total Fertility Rates (TFR) for Southern European Countries (1975 to 2011 or 2012)

In all four countries, since 1975, the TFR's have been showing a declining trend, with brief periods of increase (ups and downs). Between 1995 and 2000, the TFR in Portugal showed some increase, declining thereafter (see Figure 1). In Spain, Greece and Italy, the TFR's revealed some evidences of increase between 2000 and 2010, following a decline trend after that date. Currently all four countries exhibit a low-fertility pattern and even "lowest-low fertility".

Simultaneously with the decrease of the TFR at the Southern European Countries, there was an increase in the mean age of women at childbearing, consequently, rising too the mean age of women at the first birth (see Figure 2. The increase in the mean age of women at childbirth, in all these countries, as shown in Figure 2, has not stopped yet its upward trend, particularly in Portugal, which showed an increase of 1.5 years during the past decade - although this country had shown the lowest mean age of women at childbirth compared to the others.

Figure 2 - Mean age of women at childbirth for Southern European Countries (1975-2011)
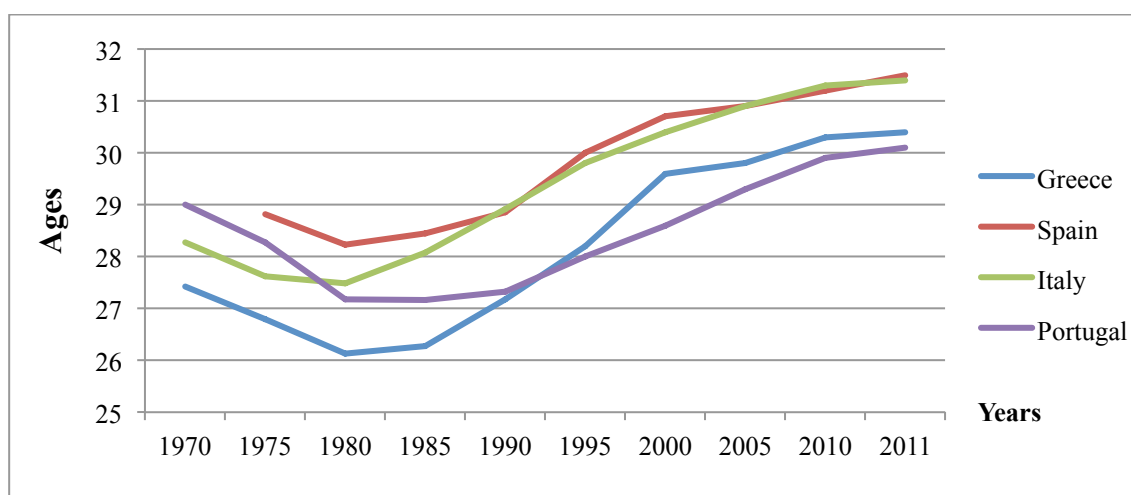
Source: Own elaboration with data from Eurostat, http://epp.eurostat.ec.europa.eu/.

Given the fertility situation of Southern European countries, it is particularly important to assess the factors underlying fertility behaviour (Schoen et al. 1999).

Nowadays, is crucial to realize the consequences of the severe economic crisis in the short-term fertility decision-making process and consequently in the number of births in the forthcoming years. The economic and financial crisis is plaguing individuals and families, the cuts in the households budgets and the rising of unemployment rates, particularly for the younger population, squeezing the families income and clouding the future of younger couples, also promote massive out-migration, and influences fertility decisions. But, in what way? Families torn apart by emigration, will they postpone their fertility decisions? Couples with very low income, facing uncertainty and job precarity, will they decide to postpone? Individuals who want to have a child (or another child) and that are dangerously near of their biological reproductive deadline, will they choose to become a parent whatever the circumstances? How, in a crisis context like the current one, the usual determinants of fertility will work?

Then, we established different types of research hypotheses regarding the factors that may be influencing the fertility intentions in the Southern European Countries. Therefore, we hypothesized that:

Hypothesis **1** – Fertility intentions increase with age, given the constant increase in the mean age of fertility. We assume that people at very young ages have a wider timing to carry out their intentions and people whose reproductive period is coming to an end feel more time pressure.

Hypothesis **2** – We assume that the lack of a partner is negatively associated with fertility intentions. In particular, we assumed that people living in union are more likely to plan to have children in the near future compared to those who do not;

Hypothesis **3** – Since lengthening of education pathways can be considered a competing activity with fertility, we assume that those with higher education are more likely to have intention;

Hypothesis **4** – People with wider family ideals may be more likely to plan to have children in the next year than those with smaller ideal family;

Hypothesis **5** - In the framework of low fertility levels in all the four countries, in which most young couples do not have children yet, we believe that childlessness is a factor that enhances fertility intentions.

Hypothesis **6** - We expect a positive connection between fertility, labour market participation and favourable financial situation of the household in the near future.

Although all the countries present low fertility levels, we have chosen not to speculate on how the intentions may differ between them. Similarly, we also consider gender an

important variable, but we prefer not to conjecture on in what way it affects the reproductive plans.

3 - Data, Variables and Method

Our research is based on the most recent Eurobarometer data (2011). In this Eurobarometer round it has been asked to respondents "How many (more) children do you intend to have" and to those who answered that still intended to have children, was placed a new question "Do you intend to have a (another) child in the next three years?"

As we aim to analyse the extent to which different circumstances are related with upcoming fertility intentions, logistic regression is required to determine the influence of each factor or variable, "all other things being equal" (Toulemon and Testa 2005). With the main goal of to examine the individual's characteristics that could be more relevant to explain the intention of upcoming childbearing, among Southern European countries, we adjusted a logistic regression model[1] with response variable based in the survey question "do you plan to have a child within the next three years" (asked only to individuals who still intend to have a(nother) child in its life-span).

For to analyse those who intend to have children in the near future *versus* those who intend to have children only later, we collapsed those answers into two categories:

1 –Intending to have a child within the next three years (which encompasses "probably yes" and "definitely yes").

0 – Intending to have a child only later (which encompasses "definitely not" and "probably not");

After accounting the missing values in the variables, the analytical sample includes 415 men and 362 women aged from 15 to 49 years old, residents in Portugal (133), Italy

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[1] The model fitting was done using the package R and GLM modelling using the methodology proposed by Hosmer and Lemeshow (2000).

(173), Spain (226) and Greece (245) (see Table 1). The explanatory variables of the models are: country, gender, marital status, age, education, ideal number of children, children ever born, labour market participation, life satisfaction and perception about future financial situation of household's.

Except for variables "age" (3 categories) and "country" (4 categories), all other variables have two categories. In the variable "marital status", we are not distinguishing in thise subsample, people living in cohabitation from those legally married or remarried. So, we just compare those who living with a partner (we called them "married") and those not living with a partner (called "unmarried").

The subjective *life satisfaction* was measured by the following survey question: "On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?" In this variable we collapsed the answers "fairly satisfied", "not very satisfied" and "not at all satisfied" *versus* "very satisfied". The "perception about future financial situation of household's" assessed by the question "what are your expectations for the next twelve months: will the next twelve months be better, worse or the same, when it comes to the financial situation of your household?". In this variable we just differentiate those that answered "worse" *versus* those answer "better", "the same" and "don't know".

The educational level measured through the question "what is the highest level of education you have successfully completed (usually by obtaining a certificate or diploma)", just distinguish between respondents who have "tertiary education" and those that don't have.

The ideal number of children was categorized into: 1- small ideals (ideals less than two), 2- two-child and; 3- larger ideals (ideals superior to two children). As the variable

age was not linear with the logit, it was categorized into three age classes (15 -28 years, 29-39 years, 3 years and 40-49), which were statistically validated. A description of all the variables, and their respective categories, used in univariate analysis is also shown in Table 1.

Table 1- Variables distribution (%), according to fertility intentions

Variables	Categories	Next three Years (%)	Later (%)
Country	1-Portugal	16	18
	2-Italy	29	16
	3-Spain	26	32
	4-Greece	29	34
	Total	*100*	*100*
Gender	1:Male	51	56
	2:Female	49	44
	Total	*100*	*100*
Children ever born	No	**60**	88
	Yes	40	12
	Total	*100*	*100*
Ideal	Small ideals	12	12
	Two-child	65	65
	Large ideals	23	23
	Total	*100*	*100*
Marital Status	1- Unmarried, Divorced and separated	27	76
	2- (Re) Married, Single living with a partner	73	24
	Total	*100*	*100*
Education	1-Not superior	74	83
	2- Superior	26	17
	Total	*100*	*100*
Working	1- No	24	60
	2 - Yes	76	40
	Total	*100*	*100*
Life satisfaction	1- Fairly, Not very and Not at all.	82	80
	2- very	18	20
	Total	*100*	*100*
Financial household Expectation	1- Worse	27	28
	2-Better, Same and Don't Know	73	72
	Total	*100*	*100*
Age	15-28 Years	20	73
	29-39 Years (ref)	67	21
	40-49 Years	14	6
	Total	*100*	*100*

4 – Analysis and results

The univariate analysis revealed that the "ideal number of children", "life satisfaction" and "financial household expectation" were not statistically significant at 95% level. The results are presented in terms of odds ratios with associated significance levels (see Table 2).

The results of the Table 2 showed that at individual level: (1) to live with a partner and (2) to have a job, are essentials elements for forthcoming fertility intentions. The age is another determinant. People aged 29 and over are those who show more possibilities to plan to have children in the coming years. Education also has a positive correlation with fertility. People with higher level of education are more likely to intend to have a child. In terms of comparison between countries, the Italians show greater intentions.

Table 2 – Odds Ratio, **Confidence intervals and p values of U**nivariate Analysis

Variables	Categories	OR	CI$_{95\%}$	*p-value*
Country	1- Italy *vs* Portugal	1.18	1.06; 1.32	0.003**
	2- Italy *vs* Spain	1.21	1.09; 1.33	0.001***
	3- Italy *vs* Greece	1.19	1.08; 1.31	0.001***
Gender	Women *vs* Men	1.23	0.93; 1.64	0.146
Children ever born	Yes *vs* No	4.79	3.34; 6.89	<0.001***
Ideal	1- Two-child *vs* Small ideals	1.00	0.65; 1.57	0.971
	2- Large ideals vs Small ideals	1.02	0.61; 1.68	0.948
Marital Status	Married *Vs* Unmarried	8.5	6.16; 11.8	<0.001***
Education	Higher *vs* Lower/Medium	1.30	1.09; 1.55	0.003**
Working	Yes *vs* No	4.80	3.52; 6.55	<0.001***
Life satisfaction	Better and Same *vs* Worse	0.91	0.63; 1.30	0.606
Financial household expectation	Very vs Fairly, Not very and Not at all	1.03	0.75; 1.41	0.853
Age	29-39 *vs* 15-28 Years	11.6	8.46; 15.9	<0.001***
	29-39 *vs* 40-49 Years	1.49	0.87; 2.54	0.145

*Significance at 10% level, ** significance at 5% level, significance at 1% level

Curiously, it is the presence of children (not the absence) that encourages fertility intentions over the next three years. This result, however, seems to be closely related to age, as 60% of individuals who have not yet entered the parenting belong to the younger ages, where the intention is also lower. The "Wald test" showed that there were no

statistical differences (95%) between "having" or "not having" children in forthcoming

fertility intentions at the ages of 29-39 years (*p-value*= 0.076) and 40-49 years old (*p-value*= 0.2965).

Our results supported the assumptions of the hypothesis 1 (fertility increase with age), hypothesis 2 (those who live with a partner are more likely to plan to have children in the near future compared to those who do not) and hypothesis 3 (positive link between higher education and fertility). In the hypothesis 6, the evidences only support that labour market participation is positively correlated with intentions. The hypotheses 4 and 5 were not corroborated.

In the multivariate model, when coupled with other significant covariates from the univariate analysis, "children ever born" and "education" have lost its statistical significance. In the test of goodness of Cessie-van Houwelingen *p-value*= 0.38 and Nagelkerque R^2= 47%, displaying a good calibration. At the Hosmer & Lemeshow goodness fit test *p-value*= 0.19 (with four degrees of freedom). The final model showed a very good discriminative power with AUC = 0.85, with a sensitivity of 86% and a specificity of 71% for a cut-offs equal to 0.409. We performed a cross-validation by bootstrap and the results showed that the model has good predictive power, having obtained very low values for optimism. The adjusted model is shown in Table 3.

Table 3- Coefficients, standard deviation and p-values of logistic model adjusted

Variables	Coefficients	Standard deviation	*P*-values
(Intercept)	- 1.670	0.724	0.021*
Age (15-28 years)	-2.765	0.642	<0.001***
Age (40-49 years)	2.076	1.036	0.045*
Country (PT/ES/GR)	- 0. 536	0.229	0.0190*
Marital Status (Married)	1.431	0.270	<0.001***
Working (yes)	0.768	0.203	0.001***
Age (15-28)*Marital Status	0.756	0.403	0.060·
Age (40-49)*Marital Status	-1.583	0.599	0.008**

*Significance at 10% level, **significance at 5% level, ***significance at 1% level.

All other things being equal, the results showed that the labour market participation is no doubt a crucial determinant of forthcoming intentions. Those who have a paid work are more likely to plan to have children in the next 3 years than those who don't. Italians are more likely to plan to have children than Portuguese, Spaniards and Greeks.

In the adjusted model, variable "marital status" has interacted with "age" (see Table 4), what means that the influence of marital status is shaped by age. The lower the age more important is the presence of conjugal ties for short-term intentions. For younger people aged between 15 and 28 years, and also between the ages of 29 and 39, having a partner is an essential condition for the upcoming intentions.

Table 4 –Odds Ratio and Confidence Intervals of the interactions between variables "marital status" and "Age"

Married *vs* Unmarried					
15-28 Years		29-39 Years		40-49 Years	
OR	CI $_{95\%}$	OR	CI $_{95\%}$	OR	CI $_{95\%}$
8.9	4.97; 16.0	4.18	2.46; 7.10	0.86	0.30; 3.32

Age	Unmarried		Married	
	OR	CI $_{95\%}$	OR	CI $_{95\%}$
29 -39 *vs* <29 years	15.9	4.51; 56.0	7.5	4.21; 13.2
29 -39 *vs* 40 -49 Years	0.13	0.02; 0.96	0.61	0.23; 1.59

In spite of an increase at the age have a positive influence in coming fertility intentions this influence is intensely conditioned by conjugal ties. As the importance of conjugal ties decreases with the age, among those not living in marital union, the more aged - and therefore, closest to the biological deadline of parenthood - are more likely to plan to have children soon. Among those living in union, at ages 29-39 and 40-49 years old, their possibilities do not differ statistically. So, for the youngest, regardless the importance of living with a partner (i. e., despite its positive influence), they are more unlikely to plan to have a children in the next three years.

5 - Discussion and Concluding Remarks

Although the ideal number of children - an "hypothetical measure of preferences in the absence of constraints" (Sobotka 2013: slide 7) - constitutes an important component of reproductive plans (Hin et al. 2011) and the two-child ideal remains highly prevalent (Goldstein et al. 2003; Frejka 2008; Testa 2006), in our analysis the ideal family size did not prove to be statistically significant.

Univariate analysis revealed that there is a positive association between education and fertility as noted Aassve et al. 2012), Parr (2010), Testa (2012), Toulemon and Testa (2005), Spéder and Kapitány (2009). If highly educated women (and also men) are more likely to postpone births (Aassve et al. 2012; Balbo et al. 2012; Barber 2001; Billari and Kohler 2009; Buber et al. 2012; Frejka and Sobotka 2008; Mcdonald 2008; Van de Kaa 1998, 2002), on the other hand, in principle, increases their possibility of getting better allocations in the labour market and therefore are associated with higher incomes levels (Aassve et al. 2012; Spéder and Kapitány, 2009), which in turn allow individuals greater resources for raising children (Mills 2010).

Childbearing is frequently postponed until the achievement of other goals in life, such as establishing oneself in the labour market (Balbo et al. 2012; Billari and Kohler 2009; Buber et al. 2012). Considering that changes in living conditions, e.g. unemployment, may modify reproductive plans (Testa 2010), the recent economic and financial recession and the economic uncertainty that runs through Southern European Countries - with very high unemployment rates – can indicate an even deeper decline in future TFR, since difficult economic conditions and high levels of unemployment lead to childbearing delays and low fertility (Adsera 2005, 2011; Goldstein et al 2009).

The partnership is still playing an important role in the forthcoming fertility intentions, in line with the finds of Aassve et al. (2012); Billari and Kohler (2002) Buber et al. (2012); Schoen et al. (1999) and Spéder and Kapitány (2009). As noted Billari and Kohler (2002), the Southern European pattern seems to remain characterized by high centrality of marriage.

So, our results reveal that the presence of a stable marital relationship still occupies a key position in fertility intentions, in adult ages (29-39) and particularly in young ages (<29). Probably, at these ages, the presence of (a) partner (a) reduces the difficulties in raising children, both in emotional and financial aspects (Barber, 2001; Aassve et al. 2012), while in the older ages, the individuals, possibly, already have greater financial and emotional stability to bear the burden of raising children independently of having a partner that support them.

In this particular model, focused specifically on those that reveal intention for the next three years versus those who intent to have children later, the age is significantly associated with fertility intentions as also noted Buber et al. (2012), and Spéder and Kapitány (2009).

Age is undoubtedly a central variable in fertility decisions (Billari and Kohler 2009), whereas childbearing may have biological limits and also social bounding lines, as critical ages from which it is not socially acceptable to become a parent (Balbo et al 2012). The greatest possibility for individuals aged over 29 years old in relation to younger people, suggest that the youngest will continue postponing their fertility decisions – once their ages still allow them to carry out their reproductive intentions later. These results suggest that, in the coming years, fertility rates in Southern Europe may possibly face an even deeper decline, pushed by the severe economic crisis.

We found evidence that residents in Italy have higher possibilities of intending to have children, suggesting that their fertility rates can provide some recovery in the coming years.

So, if we search for a profile of who are more likely to intend to have a child in the next 3 years, we can say that this individual is someone employed, resident in Italy, aged more than 29 years old and living with a partner.

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